

## ABSTRACT

Electro-poration device for the permeabilization of cells contained in a substrate comprising a signal generator for generating a stimulating signal applied by means of electrodes to the substrate wherein an electric field permeabilizing the cells membranes is induced. The device calculates and monitors the instantaneous value or the ratio GT between the current flowing through the substrate and the voltage of the stimulating signal applied to the substrate; in particular, the stimulating signal is applied in a modified manner according to the shape of an initial portion of the waveform of a curve CGT representing the value of ratio GT in successive instants after the application of the stimulating signal. The system will achieve permeabilization of cells in substrate with no or minimum damage, allowing to introduce or to extract molecules in or from the electroporabilized living cells.